

WHAT IS CLAIMED IS:

1. A method of minimizing a circuit element interference and stabilizing a performance of a circuit element within a Time Division Duplex (TDD) transceiver, which comprises:

5 providing a medium for a communication signal propagating back and forth through the medium;

constructing an analog circuit for receiving and transmitting the communication signal through the medium at a time, and for modulating and demodulating the communication signal during a communication signal receiving and transmitting process;

10 constructing a digital circuit for digital signal processing;

constructing an analog-to-digital (A/D) interface and a digital-to-analog (D/A) interface so that the interfaces couples the analog circuit and the digital circuit together;

15 providing a first ground reference so that all ground references of circuit elements in the analog circuit, in the A/D interface, and in the D/A interface are connected to the first ground reference;

20 providing a second ground reference so that all ground references of circuit elements in the digital circuit are grounded to the second ground reference;

providing a joint clock source for supplying clock pulses to the analog circuit, the digital circuit, the A/D interface, and the D/A interface; and connecting a ground reference of the joint clock source to the first ground reference.

2. The method of claim 1, wherein the medium is an antenna and the communication signal propagates through the air.

3. The method of claim 1, wherein the medium is a communication wire where
5 the communication signal propagates through the wire.

4. The method of claim 1, wherein the joint clock source is a crystal oscillator.

5. The method of claim 1, where in the constructing analog circuit step further
10 comprises:

providing a switch for transmitting or receiving the communication signal in different time periods;

providing a down-convertor for converting the received communication signal to a baseband signal;

15 providing an up-convertor for converting a baseband signal to a radio frequency signal; and

constructing a synthesizer to provide the down-convertor and the up-convertor with a base frequency of signal so that the received and baseband communication signals are demodulated and modulated respectively.

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6. The method of claim 1, where in the constructing digital circuit step further comprises:

providing baseband processor for digital signal processing; and

providing a media access control (MAC) unit.

7. The method of claim 1, wherein the A/D interface is an analog-to-digital convertor.

8. The method of claim 1, wherein the D/A interface is a digital-to-analog 5 convertor.

9. A circuit architecture for minimizing a circuit element interference and stabilizing a performance of a circuit element within a TDD transceiver, which comprises:

10 a medium within which a communication signal propagates through; an analog circuit for receiving and transmitting the communication signal in different time periods, and for modulating and demodulating the communication signal during a communication signal transmitting and receiving process;

15 a digital circuit for digital signal processing; an A/D interface circuit and a D/A interface circuit for coupling the analog circuit and the digital circuit together;

20 a first ground reference on which all ground references of circuit elements of the analog circuit, the A/D interface circuit, and the D/A interface circuit are connected together;

a second ground reference on which all ground references of circuit elements of the digital circuit are connected together; and

a joint clock source to supply clock pluses to the analog circuit, the digital circuit, the A/D interface circuit, and the D/A interface circuit, and to

have a ground reference of the joint clock source connected to the first ground reference.

10. The circuit architecture of claim 9, wherein the medium is an antenna and
5 the communication signal propagates through the air.

11. The circuit architecture of claim 9, wherein the medium is a communication wire where the communication signal propagates through the wire.

10 12. The circuit architecture of claim 9, wherein the joint lock source is a crystal oscillator.

13. The circuit architecture of claim 9, wherein the analog circuit further comprises:

15 a switch for transmitting or receiving the communication signal in different time periods;

a down-convertor for converting the received communication signal to a baseband signal;

20 an up-convertor for converting a baseband signal to a radio frequency signal; and

a synthesizer for providing the down-convertor and the up-convertor with a base frequency of signal so that the received and baseband communication signals are demodulated and modulated respectively.

14. The circuit architecture of claim 9, wherein the digital circuit further comprises:

- a baseband processor for digital signal processing; and
- a media access control (MAC) unit.

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15. The circuit architecture of claim 9, wherein the A/D interface is an analog-to-digital convertor.

16. The circuit architecture of claim 9, wherein the D/A interface is a digital-
10 to-analog convertor.